



ANALYSIS

Reimagining growth futures: Overcoming the false binary between green growth and degrowth

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ABSTRACT

When imagining how a green transition can take place, the relationship between economic growth and environmental sustainability is commonly viewed in two ways: As 'green growth,' where the two can be mutually supporting, and as 'degrowth,' where they cannot. The two are considered mutually exclusive, internally coherent, and competing eco-political paradigms. Here, we conceptually analyze the literature and map standpoints within the two positions along nine dimensions covering national institutions, world order, and scientific cosmology. We find that there are substantial disagreements within as well as agreements between green growth and degrowth. In consequence, we argue that the literature is caught in a false binary. To constructively move the debate forward, we propose giving up the paradigmatic and polarized approach and instead embracing a multidimensional plurality of imagined growth futures.

1. Introduction

Green economic debate is caught in a false binary opposition between the paradigms of green growth and degrowth. Green growth and degrowth are understood as competing ecopolitical projects, that is, two contrasting and incompatible sets of assumptions about the relationship between economic growth, political organisation, and ecological degradation (Belmonte-Ureña et al., 2021; Buch-Hansen and Carstensen, 2021; O'Neill, 2020). From this binary perspective, the green growth position views climate and environmental action as a good business case for companies to deliver on, assuming that market incentives can be remedied by pricing externalities correctly. This creates win-win propositions, allowing the economy to grow, jobs to be created, and profits to soar, all while the impact of economic activities is decoupled from environmental destruction (Chomsky and Pollin, 2020; Krugman, 2023a; Ritchie, 2024). On the other hand, the degrowth position is skeptical about the possibility of decoupling growth from impacts at a sufficiently fast rate and wide scale that would allow the global economy to respect commitments such as the Paris Climate Agreement and other important planetary boundaries. Degrowth advocates point to historical decoupling rates to support their argument that it is unrealistic to assume that a continuously growing economy can also rapidly minimize

its impacts (Hickel, 2021; Marquis, 2024; Schmelzer et al., 2022).

We argue that the binary opposition between these two paradigms is false and that it obscures numerous points of overlap and compatible programs. To address this problem, we conduct a conceptual analysis of the literature that provides a more detailed account of the varied positions that exist within green growth and degrowth. Previous reviews of the debate are effective in summarizing and categorizing the literature, but do not critically analyze relations between the two terms (Belmonte-Ureña et al., 2021; Buch-Hansen and Nesterova, 2023; Engler et al., 2024; Hickel and Kallis, 2020; Kallis et al., 2025; Tilsted et al., 2021). We map these positions along nine dimensions, covering national institutions, world order, and 'scientific cosmology' (Allan, 2018). Within each of the dimensions we discuss, green growth and degrowth can be demonstrated in different forms. By mapping this range of variation within green growth and degrowth positions, our paper moves the debate from a dichotomy defined by two different poles, towards a multidimensional landscape of various growth futures. By doing so, we hope to paint a richer picture of potential common paths forward that can provide effective and immediate socio-ecological benefits.

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2. Stuck in a theoretical impasse on imagining growth futures

When imagining how a green transition can take place, the relationship between economic growth and environmental sustainability is of critical importance (D'Amato et al., 2017; Kallis et al., 2025). The central question in the debate is whether economic growth in greenhouse gas emissions can be decoupled at a rate and scale that is compatible with ecological sustainability, especially the Paris Agreement on Climate Change (Haberl et al., 2020; Hickel and Kallis, 2020; Tilsted et al., 2021). According to the UN Environment Program (UNEP, 2011, p. 5), absolute decoupling is defined as 'resource use declines, irrespective of the growth rate'. When that happens, the environmental impact decreases while the economy might grow. Perhaps because the question of whether that is possible, in principle, allows for a 'yes' or 'no' answer, the debate has become polarized into two paradigms. Both authors self-identifying as belonging to each paradigm (cited below), as well as authors analyzing the debate from the outside (Buch-Hansen and Carstensen, 2021; J. A. Hasselbalch et al., 2023; Szalai, 2024), see the two positions as paradigms. It should be noted here that both positions argue in favor of addressing climate change and other environmental problems and not blindly pursuing GDP growth. The central difference is in their approach to the need for economic growth (Engler et al., 2024). To understand how to address climate change, this debate is critically important and has shown itself to be highly valuable. What we find problematic at this stage in the debate's evolution is its portrayal of the two positions as opposing paradigms.

Green growth and degrowth should be understood as competing 'orientational paradigms' (Hoyningen-Huene and Kincaid, 2023, pp. 190–192) within economics rather than distinct, scientific Kuhnian paradigms. Orientational paradigms are a 'thinner version' of Kuhn's paradigms, and they are especially prevalent in economics (Engler et al., 2025). Three characteristics distinguish orientational paradigms from Kuhnian paradigms: (1) they are not fixed beliefs, but shared points of orientation, and (2) they allow local progress within some parts of a given scientific community, (3) even while they are openly criticized by other parts of the community (Engler et al., 2025, p. 26). As shown in detail through numerous examples below, most scholarship on growth futures orientates itself in relation to green and degrowth, demonstrating their nature as orientational paradigms. While serving as orientational paradigms in ecological economics, the two concepts are less used in mainstream economics, likely due to the discipline's assumption that economic growth must underpin any imaginable type of green transition (Buller, 2022). This is not the case in ecological economics, highlighting the increasingly clear disciplinary distinction between ecological economics and mainstream economics. In conducting this analysis, viewing green growth and degrowth as orientational paradigms within environmental and ecological economics helps build the case for analyzing their internal inconsistencies and mutual overlaps. We argue that these are not competing and mutually exclusive ecopolitical projects, but local settlements within the discipline with several gray areas and blurred boundaries. Nonetheless, both green growth and degrowth proponents continue to reproduce the false binary.

According to proponents of green growth, the idea is to grow the economy while addressing environmental problems. The position is well captured by considering direct quotes from some of its most prominent supporters. For example, according to Paul Krugman (2023a), p. 2), 'there is no necessary relationship between economic growth and the burden we place on the environment. ... delinking growth from environmental impact isn't just possible in principle but something that happens a lot in practice.' In a similar vein, Chomsky & Pollin (2020, p. 7) say the following about economic growth as part of their proposed Green New Deal: 'Economic growth must proceed along a sustainable and egalitarian path, such that climate stabilization is unified with the equally important goals of expanding job opportunities and raising mass living standards for working people and the poor throughout the world.' Finally, Ritchie (2024, p. 42) argues that 'economic growth is not

incompatible with reducing our environmental impact. ... We can reduce our environmental impact and reverse our past damage while becoming better off.'

According to proponents of degrowth (also sometimes referred to as post-growth, although there are some differences, as shown by Kallis et al., 2025, p. 62¹), the idea is to reduce the size of the economy to address climate change and other environmental concerns. As defined by Hickel (2020b, p. 174), 'Degrowth is about reducing the material and energy throughput of the economy to bring it back into balance with the living world, ... it is about shifting to a different kind of economy altogether – an economy that doesn't need growth in the first place.'. In more abstract terms, Schmelzer et al. (2022, p. 30) define degrowth as 'a holistic critique and proposal capable of deconstructing the dominant ideology driving capitalism today – the ideology of growth' adding that 'there is no evidence for global absolute decoupling of economic growth from environmental impacts' (Schmelzer et al., 2022, p. 89). While emphasizing that decoupling is not possible, the authors point out that reducing the size of the economy is not the goal in itself. As summarized by Hickel (2020b, p. 174), 'degrowth is *not* about reducing GDP. ... GDP grows more slowly, or stops growing, or even declines. And if so, that's okay; because GDP isn't what matters.' It should be noted here that degrowth is Western-centric in its origin and development (Engler et al., 2024), as reflected and elaborated upon in the 'global applicability' dimension in the section below.

Creating and enforcing the illusion of a paradigm, authors from green growth and degrowth predominantly mischaracterize their perceived opposing paradigm. As an example on the green growth side, Chomsky and Pollin (2020, p. 115) claim that '...following a degrowth agenda implemented as an emissions reduction program, global GDP contracts by 10 percent over the next thirty years. ... In terms of CO₂ emissions, the net effect of this 10 percent GDP contraction, considered on its own, would be to push emissions down by precisely 10 percent—that is, from 33 to 30 billion tons. The global economy would still have not come close to bringing emissions down to zero, despite having manufactured the equivalent of a Great Depression.' No degrowther would agree that this is an accurate portrayal. As an opposing example on the degrowth side, Schmelzer et al. (2022), p. 6) claims that '[Green growthers] think there is no need to fundamentally change the current system – we just need better technology, more efficiency, and the proper application of science and market mechanisms.' Similarly, no green growther would agree that this is an accurate portrayal. Such straw manning is seemingly recognized in the literature, such as by Hickel (2020a, p. 1), pointing out that '... in recent interviews, when Pollin has been asked about degrowth, he has responded with claims that are factually incorrect and, I think, intentionally misleading.' Beyond such straw manning, the most common critiques of their opposing positions are that green growth is technically or physically impossible (Daly, 2005; Hickel and Kallis, 2020) and that degrowth is politically impossible (Driscoll, 2024). Proponents of each side also claim that it is the other side that lacks the imagination to understand that their position is possible (Szalai, 2024). Kohei Saito (2024, p. 194) finds that critiques of degrowth are due to 'a poverty of imagination that simply accepts the status quo as unchangeable.' This straw manning is not surprising, given the power of self-interest to shape climate views (Tol, 2017), but it is unproductive.

While scholars analyzing the debate from the outside do not resort to straw manning, they still see the two positions as mutually exclusive and internally coherent paradigms (Belmonte-Ureña et al., 2021; Buch-

¹ Kallis et al. (2025) define 'post-growth' as an umbrella term that broadly covers all positions that 'emphasize independence from – or prosperity without – growth.' Post-growth, thereby, is a collection of orientational paradigms, but we focus on degrowth positions within the post-growth umbrella as these share more of a self-understanding of being a coherent project in direct opposition to green growth.

Hansen and Carstensen, 2021; O'Neill, 2020). In the periphery of the debate, a few scholars have argued that the two positions are less binary than assumed (Hasselbalch et al., 2023; Stratford, 2020). This is the emerging scholarship that we intend to build on. Here, we provide a critical conceptual analysis that re-values green growth and degrowth as overlapping orientational paradigms that help us pluralize debates on growth futures and escape restrictive binaries.

3. Dimensions of nuance: mapping similarities and differences within and between green growth and degrowth

The purpose of our analytical approach is to be able to, first, cover all standpoints within green growth and degrowth, and, second, to inductively map the positions on the dimensions that they cover. In terms of methodological approaches, we conduct our analysis as an *integrative* literature review. This type of review is less descriptive than a systematic literature review and allows for a semi-structured approach to critiquing and synthesizing a literature with the purpose of generating 'a new conceptual framework or theory' (Snyder, 2019, p. 336). Thereby, this approach facilitates a critical conceptual analysis of differences and similarities between green growth and degrowth, drawing on examples from existing literature reviews, and ultimately a theoretical discussion on how to understand relations between the two orientational paradigms. Because numerous systematic and non-systematic reviews of the growth debate in ecological economics have already been conducted, an integrative approach that moves quickly to conceptual analysis is called for. These previous reviews are rich in examples that we draw on in order to illustrate the wide variety of positions and argumentations prevalent in both green growth and degrowth-inflected scholarship. Belmonte-Ureña et al. (2021) provide a bibliometric analysis of both terms, while degrowth reviews include Kallis et al. (2025), Buch-Hansen and Nesterova (2023), as well as Engler et al. (2024), and green growth reviews include Hickel and Kallis (2020) and Tilsted et al. (2021). These reviews are effective in summarizing and categorizing the literature but do not critically analyze relations between the two terms. Instead, the literature in many cases reflects the binary that we aim to question here. To effectively map how the debate goes beyond such a binary approach, our research approach is designed to ensure that the analysis covers all expressed standpoints within green growth and degrowth by referring to existing, comprehensive literature reviews. To bolster our claims, we move beyond the literature reviewed in the studies above in two ways: first, as the debate evolves fast with several academic and gray literature publications per month, we have included recent examples that illustrate our points by relying on keyword searches on academic databases for 'green growth,' 'degrowth,' and 'postgrowth.' Second, to grasp how the scholarly debate shapes public discourse beyond academic circles, we also search for and analyze popular science material, think tank reports, blog posts, and media articles. It is important to reiterate that our goal is not a comprehensive mapping of the literature, but to integrate and synthesize a conceptual framework drawing from existing reviews and current examples.

To capture and demonstrate the problems of the current binary and paradigmatic approach, we map positions within green growth and degrowth along a set of dimensions. These dimensions are inductively derived by analyzing the literature through the above-mentioned sources, while looking for disagreements between standpoints within each assumed paradigm. The nine dimensions shown below are thereby the end result of an extensive and iterative exercise of exploring different sets of categories that most concisely captured both internal differences within green growth and degrowth as well as similarities between them. We also sought to make the dimensions cumulatively exhaustive and mutually exclusive. We understand each dimension as a continuum on which many possible positions can be taken, while the table aims to map the range of positions on each dimension from one extreme position (A) to its opposite (B). This approach allows for a clear conceptualization of both differences within and similarities between the two. Thereby, the

selected nine dimensions only cover actual disagreements, not all possible disagreements or similarities. For example, there are no apparent disagreements on issues such as human rights, religion, or rationality, and these principally possible dimensions are therefore not included in our mapping. Instead, we include a dimension if we identify a disagreement within either or both paradigms. For example, within both green growth and degrowth, there are authors advocating for either individual or organized 'agents of change'. Furthermore, authors within each paradigm have a position on many or all dimensions, and consequently, they may be referenced several times. This means that the table does not indicate that there are 36 (nine times four) unique standpoints.

The sections following Table 1 offer examples from the literature that illustrate the wide variety of positions that are taken in green growth and degrowth scholarship. We focus on the less abstract and more policy-specific scholarship that takes an explicit standpoint on the dimensions, and they should merely be seen as one example to support the point, rather than the only example or a representative example. In the analysis below, we categorize the nine dimensions into three meta-categories for the sake of clarity of argument, namely, by national institutions, world order, and scientific cosmology.

The first four dimensions tell us about variation in national institutional setups for green growth and degrowth: (1) agents of change can be individual or organized; (2) mechanisms of change can be bottom-up or top-down; (3) economic systems can be free markets (decentralized) or planned (centralized); and (4) political institutions can be democratic or totalitarian. The next three dimensions cover our understanding of 'world order', in which we emphasize global economic concerns: (5) international economic integration can be low or high; (6) global applicability can be contextual or universal; and (7) international redistribution can be emphasized or discouraged. The last two dimensions define scientific cosmology, in other words, ideas about how the world works and how history progresses: (8) technological progress can be optimistic or pessimistic, and (9) understanding of history can be dynamic or static. We borrow the term 'scientific cosmology' from Allan (2018, pp. 31–35), who understands cosmologies as the ultimate foundation of ontological, epistemological, and teleological ideas about the nature of reality and the place of humans within it. The concept is similar to (but more encompassing) than the 'general systems logic' introduced by Buch-Hansen and Carstensen (2021) in their comparison of green growth and degrowth as opposed ecopolitical projects, which more directly targets assumptions about the nature of economic systems.

4. National institutions

4.1. Differences within green growth

If we consider the agents of change that are assumed to be in the driving seat of green growth-oriented sustainability transformations, we can find examples either of micro-level market actors such as firms, consumers, and investors or more macro-level industrial coalitions between the state, firms, and organized labor. The notion that transformative change must originate from the aggregate of micro-level decisions by market actors has strong roots in neoclassical economic thinking. Climate change is understood as a market failure stemming from an unpriced externality, which can be fixed by pricing it correctly (Nordhaus, 2008). Carbon taxes are posited as the most efficient mechanism of change, representing the neoliberal commitment to the primacy of the market and price signals. Most contention around carbon pricing has to do with setting the right price level and arguments over the appropriate discount rate (Keen, 2022). A sufficiently high carbon price would discipline polluting firms through the logic of 'shock therapy', implying rapid structural change by 'stranding' carbon assets combined with fiscal and monetary austerity (Gabor and Braun, 2025). A flat and uniform carbon price would reorient the behavior of all kinds of market actors, individuals, and firms alike. Carbon prices and market competition are the dominant positions within green growth, gaining

Table 1

Overview of green growth and degrowth positions on nine dimensions.

		Green growth		Degrowth	
		A	B	A	B
National institutions	Agents of change Individual (A) to organized (B)	Market actors (firms, consumers, investors)	Coalitions between firms, states, unions	Empowered citizens, ecological citizenship	States and vanguard parties
	Mechanism of change: Bottom-up (A) to top-down (B)	Market-led, carbon shock therapy	Green industrial policy, big green state	Social movements	Planned degrowth, war communism
	Economic system Decentralized (A) to centralized (B)	Green capitalism	Growth-oriented eco-socialism	Anarcho-communism	De-growth oriented eco-socialism
World order	Political institutions: Democratic (A) to totalitarian (B)	Liberal democracy	Environmental authoritarianism	Radical, ecological democracy	Authoritarian eco-socialism, ecological Leninism
	International economic integration: Higher (A) to lower (B)	High integration - neoliberal or social democratic or ecosocialist	Low or selective integration - industrial policy and national security	Half-earth socialism	Self-sufficient local communities
	Global applicability: Contextual (A) to universal (B)	Fossil-based growth in the South	Green growth everywhere now	Global North shrinks so South can grow	Degrowth works in all countries
	International redistribution: Emphasized (A) to discouraged (B)	Liberal international order (competition, trade, aid)	Neomercantilism (rivalry, zero-sum), neoliberalism	International solidarity (transfer of tech, capital, aid)	Relocalization (self-sufficiency, autarky)
Scientific cosmology	Technological progress: Optimistic (A) to pessimistic (B)	New revolutionary, disruptive technologies await	We already have the tech we need	Digital socialism, convivial and democratic technology	Anti-technology, critiques of industrialism
	Permanence, teleology, understanding of history: Dynamic (A) to static (B)	Growth as a necessary political project	Growth is infinite, law of nature	Green growth now can lead to degrowth later	Growth is inherently destructive

further momentum through mass market books such as Bill Gates' *How to Avoid a Climate Disaster* (2021) or techno-optimist think tanks like the Breakthrough Institute.

But carbon pricing is not the only mechanism of change advanced for a green growth transition. The advent of industrial policy and state intervention for ambitious climate action has provided a Keynesian or post-Keynesian challenge to previously dominant neoclassical economic policy (Allan et al., 2021). The American Inflation Reduction Act was perhaps the prime example of large-scale industrial policy in the West in support of the green transition, which even gained support from mainstream economic commentators, although they cautioned about its implications for global free trade and efficient markets (Krugman, 2023b). Industrial policy posits a much stronger role for the state in 'picking the winners' and not just setting a carbon price to let the market figure it out. This also changes assumptions about relevant agents of change in the green transition, putting much more emphasis on state agency, industrial coordination, and corporatist traditions. Chomsky & Pollin (2020), who no one would accuse of being neoclassical economists, strongly argued for a green growth-oriented Green New Deal, which would clearly rest on industrial policy and a strong state. Observing this range within the green growth position is sobering for those who may be too quick to equate it to a techno-optimist, neoliberal climate position. The Green New Deal for Europe (DiEM25, 2024), as formulated by the Democracy in Europe Movement (DiEM25), is another example of a growth-oriented ecosocialist policy program, where sustainable economic expansion is seen as critical to creating green jobs and social equity. Green growth can thus be theorized as consistent with different economic systems, both green capitalism and ecosocialism. And if we lift our eyes from the West, it is clear that both democratic and authoritarian states, such as China (Beeson, 2016), are committed to green growth.

4.2. Differences within degrowth

As for the degrowth side of the debate, we find a similar range of mechanisms of change going from bottom-up to top-down, although there is much more emphasis in degrowth on the bottom-up mechanism. The question of how to bring about degrowth transformations is

notoriously difficult, perhaps owing to the multiple prevalent understandings of what degrowth transformations even entail (Hickel, 2021; Schmelzer et al., 2022). For example, Fitzpatrick et al. (2022) provide a systematic mapping of degrowth policy proposals, finding 530 different policy proposals in their sample, split into 13 different themes; and Engler et al. (2024) analyze a wide variety of distributional and monetary policy proposals from degrowth scholarship. Different kinds of policies here might be associated with different kinds of mechanisms for change. In general, however, broad-based, democratic, and inclusive social movements are seen by some as a prerequisite for bringing about legitimate demands for degrowth policy change (Burkhart et al., 2020). Such movements would position empowered citizens as the ultimate agents of change, although radical alterations in political and ecological consciousness would seem to be required for popular degrowth movements (Buch-Hansen & Nesterova, 2024). For others, however, there is unexplored scope for instituting degrowth through the mechanism of planning (Durand et al., 2024). There is a resurgence of interest in postcapitalist planning, although the ecological question is relatively under-examined (Schmelzer and Hofferberth, 2023). Planning can also take multiple forms, ranging from decentralized institutions for sourcing democratic input to the planning process, to centralized, technocratic bureaucracies. The more centralized the planning system gets, the more state elites and vanguard parties are assumed to be the main agents of change, in what has been termed 'ecological Leninism' by some (Tooze, 2021). Malm (2020) goes even further in arguing that the lessons from the COVID-19 pandemic could inform a system of war communism to meet the climate challenge with dramatically more urgency.

Different economic systems are also posited within degrowth, although the current form of capitalism is universally understood to be fundamentally opposed to social and ecological sustainability. It is worth stressing the point here that most degrowth scholarship originates in the Global North, and takes its point of departure in changes to the national and economic institutions of wealthy countries (D'Amato et al., 2017; Martínez-Alier et al., 2010). At one end of the spectrum, we can envisage anarcho-communist systems of provision and exchange that operate on the local scale. Small-scale collectives, anarchist communes, ecovillages, and other local, prefigurative phenomena tend to be upheld

and vigorously studied as examples of degrowth economies in practice (Brossmann and Islar, 2020). Degrowth scholarship has been criticized for a bias towards methodological localism, meaning it is often hard to extrapolate from these smaller examples to macro-scale systems (J. Hasselbalch and Kranke, 2024). As such, it is unclear whether degrowth economies in the aggregate would function exactly like ecological socialism (Vettese and Pendergrass, 2022), or whether there are important differences. Since ecological socialism can also be growth-oriented, we know that not all ecosocialism would qualify as degrowth, at least. We can thus identify a range of possible degrowth economic systems running from local subsistence economies to large-scale planned economies, with steady-state, mixed economies somewhere in the middle (Daly et al., 1994). This also opens the door to a range of political institutions, ranging from the anarchist and collectivist norms that organize self-sufficient communities (who would be completely decoupled and self-contained from broader economic structures) to the democratic green states as understood by Eckersley (2004) that would be required to operate the planning apparatus. Although this would not be accepted as degrowth on principled grounds, there is, in theory, nothing preventing an authoritarian state from running a planned, ecologically sustainable, steady-state economy, which would be coherent with ecological Leninism (Tooze, 2021).

4.3. Similarities between?

We can conclude that national institutions and theories of political change vary widely within green growth and degrowth. Neither of these labels suffice as descriptors of some coherent paradigm. Green growth can imply either carbon pricing or green industrial policy, and it could exist within green capitalism or ecosocialism. Degrowth might imply either social mobilization, vanguard parties, or bureaucratic politics, and it could be consistent with anarcho-communism, planned economies, or steady-state mixed economies. And since we are not aiming to provide an exhaustive review, but simply exemplify different possible positions we know to exist, we concede that the variation we illustrate here may be even more dramatic. It is also worth noticing that green growth and degrowth aim for very different scopes of change, so the variation within the degrowth literature is understandably much wider. It is a relatively minor consideration whether green growth should be pursued through carbon pricing or industrial policy in comparison to the enormous systemic changes implied by different approaches to degrowth. This makes it harder to locate clear points of similarity. However, scholars have recently argued that policies and mechanisms from green growth could be used to advance degrowth (J. A. Hasselbalch et al., 2023). For example, Allan (2024) argues that industrial policy is the most realistic political option to build green states and move beyond growth. Our comparison may reveal even further possible examples: we see much hope in exploring planning (Ban and Hasselbalch, 2025), perhaps in combination with carbon pricing and industrial policy (as components of plans), to move from green capitalism to green mixed economies or even ecosocialism. Social movements and prefigurative collectives may help inspire policies and institutions that keep green planning states responsive and democratic (Durand et al., 2024).

5. World order

5.1. Differences within green growth

On questions of world order, we can ask how green growth scholars view international economic integration, the global applicability of the policy paradigm, and the extent of international redistribution. Whether strong international economic integration is important for green growth depends on who you ask, and it depends on what you mean by 'economic integration'. A green growth and high integration position can be identified in everything from minimalist, neoliberal green growth to maximalist, ecosocial green growth. Returning to the paradigmatic

example of Nordhaus' (2008) neoclassical climate economics, high economic integration here is understood as a uniform carbon price that applies globally, coupled with the removal of barriers to trade and market-based solutions. This would, in theory, internalize the externalities of carbon emissions, reallocate flows of goods and investments, and spur technological innovation. This neoclassical position can also be combined with a stronger role for government and global governance, as advocated, for example, in the Stern Review (Stern, 2007), which moves us further towards mainstream social democracy. If we keep moving left on the political spectrum, we find examples of green growthers who are extremely critical of neoliberal globalization but still argue for high levels of global economic integration. For example, Chomsky and Pollin (2020) call for fair, cooperative internationalism with regulated trade and investment, protected labor rights, technology transfers, development aid, and debt cancellation, among other things. A green growth-oriented ecosocialist world order would entail many of these same things, but with extremely circumscribed private ownership and markets, more public ownership, and strong financial reform (DiEM25, 2024).

In general, it is a cornerstone of the green growth position that global cooperation and high levels of exchange of technologies and renewable energy are strictly necessary to meet decarbonization goals. This means there is a clear overweight of green growth scholarship that argues in favor of strong global economic integration. However, we can identify some green growth positions that argue for reduced dependence on global markets and greater national or regional self-sufficiency, which the political economy literature has approached as limited forms of 'neomercantilism' or 'autarky' (Helleiner, 2021). With heightened geopolitical tensions turning economies away from globalization, there is increasing talk of a 'geoeconomic turn' in the global political economy (Babić et al., 2024). In short, the teleology of neoliberal globalization (as exemplified in the Stern and Nordhaus positions above) has been undermined in the past decade of resurgent nationalism and trade war (Deneen, 2023). For the green growth position, this has meant a return to industrial policy as a catch-all tool that can address climate change, national security, and industrial competitiveness at the same time (Allan et al., 2021; Rodrik, 2014). Green growth has traditionally argued for 'common but differentiated responsibilities', which suggests a stronger role for green growth in the Global North while allowing the Global South more space for development before introducing harsher emissions reduction schedules. However, the current geoeconomic landscape has replaced international climate agreements with national policies that subsume collective climate action to geopolitical strategy. Under such conditions, green growth is increasingly weaponized for security purposes (Sovacool et al., 2023), meaning it becomes a driver of national industrialization, re-armament, and energy independence agendas.

5.2. Differences within degrowth

Degrowth scholarship displays a similar range of opinions on international economic integration. For some, high levels of integration are necessary for a just, ecosocialist world that can regulate effectively and exercise global solidarity (Vettese and Pendergrass, 2022). For others, scale is the problem, and small is beautiful – the only truly sustainable economies, they argue, are local and self-sufficient (Latouche, 2009). Although degrowth scholars are united in a strong critique against capitalism and neoliberal globalization, they advocate different visions of global order (Hasselbalch and Kranke, 2024). Let us consider these two opposite poles in turn.

Beginning with degrowth positions in favor of high levels of global economic integration, Vettese and Pendergrass (2022) propose a vision of 'half earth socialism' that would cordon off half of the Earth's land-mass for rewilding to protect biodiversity and mitigate climate change. Strong environmental stewardship would be combined with global-scale resource allocation and production planning in areas like food production, renewable energy, and essential goods. By necessity, living

standards would also have to converge globally on more ecologically sustainable lifestyles and levels of consumption – meaning reductions in wealthy nations and increases in poorer nations. Finally, rapid decarbonization and sustainable industry would require global cooperation on technology and knowledge, sharing data and innovations across boundaries and at scale. Naturally, this level of global cooperation and planning would require unprecedented levels of interventionist global governance and regulatory oversight. It would also place strong demands on governments and the private sector to set aside sovereignty, security, and competitiveness concerns in favor of global sustainability and well-being.

On the complete opposite side of the spectrum, we find degrowthers who are fundamentally opposed to international economic integration and large-scale economic relations and flows. A paradigmatic example of this position is [Latouche \(2009\)](#), who bases his vision of degrowth on local, self-sufficient economies as the only true foundation for sustainability, taking inspiration from Daly's work on steady state economies ([Daly et al., 1994](#)). Latouche argues strongly for a 'relocalization' of the economy towards locally sourced goods, local labor, and localized governance. In locally self-sufficient economies, lifestyles and cultural orientations would naturally shift towards finding 'frugal abundance' and wellbeing ([Plomteux, 2024](#)). While economic relations would be locally oriented, in this vision, there is an important role to be played by international political activism to spread awareness and cause relocalization to occur in other places. This critique is directed at industrialized countries, meaning degrowth has less application beyond the West or the Global North. Scholars taking this position would indicate the strongly European base of degrowth scholarship and activism ([Engler et al., 2024](#); [Martínez-Alier et al., 2010](#)). However, other scholars argue that degrowth should also inform socio-ecological transformation in the Global South, especially in contesting and breaking with colonial continuities ([Dengler and Seebacher, 2019](#)). The relocalization of economies everywhere would mean less scope for international redistribution or the need for global governance.

5.3. Similarities between?

Within both green growth and degrowth, we can find opposed visions of world order. For some, green growth requires stronger global regulation, a price on carbon, and free markets. For others, this vision of neoliberal globalization is already in the past, and the increasing turbulence in geopolitics means that green growth must be pursued through industrial policy and support national security. In degrowth, some argue for global redistribution, technology transfer, and mass nature conservation, which would necessarily rest on high levels of economic integration and global governance. For others, small is beautiful, and only local and self-sufficient economies can bring about sustainable production and consumption patterns. We can see a similarity between the green growth and degrowth positions that advocate for much stronger global governance, whether it is directed towards pricing carbon on free markets or rewilding nature. However, in the current geopolitical climate, it is more likely that lower levels of governance and integration will prevail. Here, degrowth argues for a retreat towards the local level and green growth for the ascendancy of the nation-state. While these positions appear contradictory on the surface, they may share underlying assumptions of 'autarky,' whether on local or national scales ([Helleiner, 2021](#)). However, green growthers are much more cautious in advocating for strict autarky, often preferring to speak of 'selective integration' where countries make strategic decisions about retaining national control of some sectors of the economy and opening up others for more international integration. Clearly, however, neither ecopolitical project can be deemed to be internally consistent here on matters of world order, global applicability, and economic integration.

6. Scientific cosmology

6.1. Differences within green growth

Considering scientific cosmology permits us to find areas of similarity and difference between green growth and degrowth on two parameters: views on technological progress and the role of growth in the understanding of social history. Views on technological progress within the green growth camp range from optimistic to neutral. The most optimistic position expects new disruptive technologies to await in the near future, which can easily be scaled up and globally deployed to fix energy and sustainability problems. The primary role of technological innovation is to dramatically decrease the cost of green energy, permitting a more cost-effective sustainability transition. Evidence for this position is often sourced from the tumbling prices of solar panels, windmills, and electric batteries ([Way et al., 2022](#)), and it is the default stance towards the role of technological progress in the green transition held by key institutions of the liberal world order, such as the OECD, World Bank, and European Union. Technological optimism permeates ecomodernist and liberal thinking on the green transition as popularized by figures such as Bill Gates, Steven Pinker, and the Breakthrough Institute. Even more powerful and cheaper sources of green energy are just around the corner, such as 'clean' nuclear and fusion energy, and deep-sea mining provides all the minerals and metals required. There is also a strong faith in the potential of carbon capture and storage technologies to address the problem of 'overshoot' ([Malm and Carton, 2024](#)). Teleologically, this side of the spectrum is joined by a belief in human progress and the steady advance of enlightenment values, defining their 'enlightenment environmentalism' against a negative and defeatist 'romantic declinism' ([Pinker, 2021](#)). Technological progress is a natural driver of that process and a force for human flourishing. Economic growth is inherently natural and positive, and technology will succeed in decoupling it from ecological degradation. Opposition to these arguments on environmental grounds is labeled 'misanthropy' ([Pinker, 2021](#), p. 8).

There is no real technological skepticism or anti-technological sentiment within the green growth discourse, but more neutral positions on technology and progress do exist. For example, many Green New Deal advocates would argue that we already have all the technologies we need, and the focus should be on how to build political momentum for their installation and deployment at scale ([Chomsky and Pollin, 2020](#); [Pettifor, 2020](#)). For example, [Ritchie \(2024\)](#) argues that it is only in the last few years that green energy technologies and electric vehicles have become competitive, but their viability now means there are no obvious barriers to mass uptake. In this view, technological progress has done its job, and it is all a matter of implementation now. In terms of teleology, this position tends to view growth more as a necessary political project instead of a natural law and force for good. If the barriers to green energy are more political than technological, then growth seems required to overcome political blockage and build broad-based coalitional support for the green transition ([Chomsky and Pollin, 2020](#)). Whether such future growth would risk undermining the potential to realize ecological benefits is mostly not reflected upon, as the concerns of this camp are more immediate and pragmatic to the current political situation.

6.2. Differences within degrowth

Views on technological progress and the role of technology in sustainability transformations vary from optimistic to pessimistic in the degrowth literature, reflecting the literature's ambivalent stance on modernity ([Strunz and Bartkowski, 2018](#)). Caricatures of degrowth scholarship as decidedly anti-technological and romanticizing the past do not engage fairly with the range of thinking within the literature. Some of the most optimistic views on technology can be found within the niche of scholarship that seeks to revitalize economic planning by

leveraging advances in digital technologies and infrastructure (Groos and Sorg, 2025). These advances in ‘digital socialism’ argue that the problem of ‘socialist calculation’ (market complexity exceeding planning capacity) can be overcome by repurposing the tools of today’s data-intensive capitalism (Morozov, 2019). At least some of this literature specifically builds on degrowth by framing digitalization as a vehicle for economic transformation towards socio-ecological well-being (Groos, 2021). Moving from the post-capitalist future into everyday practice, we can also find optimistic views on the potential of ‘democratic and convivial technology’ (Kerschner et al., 2018) to contribute to reducing work hours and freeing up leisure time, although ensuring these purposes are met requires challenging the current ownership structures and logics of technological development (Schmelzer et al., 2022, p. 229).

There are also more neutral views on the role of technology and technological progress within degrowth, essentially echoing the views of Green New Deal thinkers and activists that we already have all the technology we need to ensure just and sustainable lifestyles globally, but the problem is their highly unequal distribution (Hickel, 2021). From this perspective, technological innovation to meet sustainability challenges is either unnecessary – a distraction from the more important political and economic work of rescaling material throughput and redistributing wealth and productive capacity globally – or it is counterproductive and harmful in the sense that it legitimizes continued unsustainable and unequal accumulation by promising highly speculative technological fixes, such as carbon capture and storage or power-to-X (Malm and Carton, 2024; Marquis, 2024). This brings us to more explicitly anti-technology views within the degrowth community, where the most powerful examples can be drawn from the extensive critiques of industrialism as a problematic force both within capitalism and socialism (Gorz, 1985; Schmelzer et al., 2022, pp. 143–157). From this perspective, technology itself is the problem, and the development of productive forces in a society will always lead to exploitation. These strongly contrasting views on technology and technological progress in the degrowth literature are also associated with different opinions on growth itself. For the anti-industrialists, growth is inherently destructive because it leads to exploitation and inequality. For the digital socialists, emancipatory future societies can have high levels of growth, well-being, and equality. For yet others, green growth now can be a necessary political compromise that is the most direct route to equality, well-being, and post-growth in the future (Albert, 2024; Allan, 2024).

6.3. Similarities between?

On matters of scientific cosmology, which we have treated as views on technology, progress, and growth, we thus once more find similarities between the positions and differences within them. There are fractions of both green growth and degrowth thinking that embrace technological progress and envision futures of abundance and wealth for all. The difference here is that green growth ecomodernism understands such a future to come about through accelerated capitalist accumulation and innovation, while techno-optimist degrowth can only happen if ownership structures and means of production are democratized and activities are planned. There is greater common ground in technologically neutral Green New Deal thinking, which can be either growth- or degrowth-oriented – here both sides agree that technological innovation is beside the point, and redistribution and mass deployment of current technology is the main priority. Finally, only degrowth seems to offer clear critiques of technology and growth as such. Teleological views on growth and societal progress range from the Enlightenment narrative of green growth to the counter-Enlightenment narrative of the industrial critique. However, both sides keenly understand the instrumental power of growth as a means for forging political coalitions.

7. Conclusion

In June 2024, The New York Times’ nonfiction book critic Jennifer

Szalai (2024, p. 9) published an article summarizing the debate between green growth and degrowth as two sides stuck in a ‘zero-sum dispute.’ The publication of the newspaper article is a clear indication that the debate is proliferating beyond academia into public discourse and that this movement is carrying with it its current problematic binary approach. At this stage, it is critical to recognize the multidimensionality of possible growth futures. The intention of this article is to provide a constructive way forward for the debate on the relationship between environmental sustainability and economic growth. Our motivation is to transcend the false binary opposition between the two orientational paradigms of green growth and degrowth. By reviewing and analyzing the scholarship of the two positions through an integrative literature review, we have inductively found nine dimensions by which there are disagreements within and agreements between the two positions.

Future scholarship critiquing either position can use the proposed dimensions to avoid the currently pervasive problem of assuming homogeneity within and differences between positions. Thereby, the most important part of our proposed way forward is for scholars to recognize the growth debate as a multidimensional landscape of possible growth futures rather than a restrictive binary. Moving from a dichotomy to a landscape, we hope to paint a richer picture of potential common paths forward that can provide effective and immediate socio-ecological benefits. While we have identified nine dimensions, we do not consider these the final and ultimate framework for understanding sustainability and growth. Rather, it should be a dynamic debate that may include entirely different dimensions and categorizations. Future research could also probe deeper into the repercussions of viewing green growth and degrowth as orientational paradigms for ecological economics. We have claimed in this article that viewing them as such helps build the argument for exploring their internal inconsistencies and mutual overlaps, but more work could be done to establish this fact and analyze how it impacts the relationship between ecological and mainstream economics. By constructively identifying areas of overlap and common ground between degrowth and green growth, we hope this article can inspire the development of policy proposals and reforms that can deliver a rapid and just green transition of the global economy.

CRedit authorship contribution statement

Jacob Hasselbalch: Writing – original draft. **Mathias Larsen:** Writing – original draft.

Declaration of competing interest

No potential competing interests were reported by the authors.

Data availability

No data was used for the research described in the article.

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